

THREE NEW CUMACEA FROM SOUTH AUSTRALIA

By HERBERT M. HALE, DIRECTOR, SOUTH AUSTRALIAN MUSEUM.

Fig. 1-6.

Two of the species described below were collected by Mr. B. C. Cotton from stones dredged in shallow water. The third was taken by Mr. W. H. Baker a long time ago.

FAMILY BODOTRIIDAE

CYCLASPIS G. O. Sars.

CYCLASPIS CAPRELLA sp. nov.

Adult male. Integument not highly indurated. Carapace more than one-fourth total length, and with greatest width only about one-half its length and equal to its height; dorsum with a rather feeble median longitudinal ridge, and

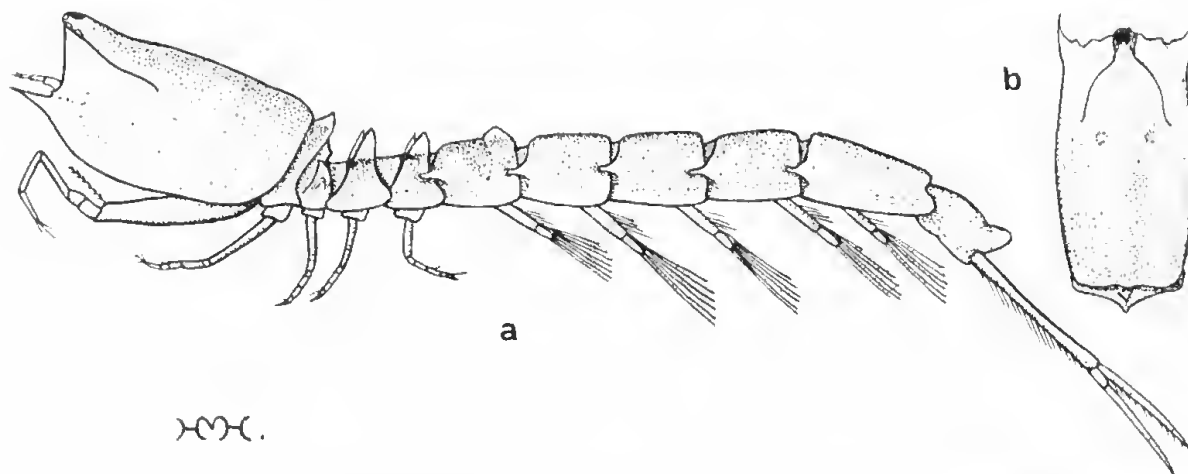


Fig. 1. *Cyclaspis caprella*, type male; a, lateral view; b, dorsal view of carapace ($\times 19$).

with a pair of shallow and inconspicuous depressions in front of the middle of length; antennal notch distinct, and antennal angle subacute; inferior margin on each side produced forwards anteriorly to form an acute inwardly curved horn, which reaches a little beyond the level of the ocular lobe. Pseudorostral lobes not quite reaching apex of the prominent ocular lobe, which bears a number of lenses, and is pigmented.

First pedigerous somite concealed. Second with an elevated compressed dorsal tubercle. Third not so deep, with an indistinct elevation on each lateral face. Fourth and fifth with pleural portions expanded, each with a pair of triangular dorsal tubercles.

All pleon somites with a faint median dorsal ridge; on the first somite the dorsal ridge is elevated posteriorly as a blunt tubercle, and there is an obscure elevation on each side; first five somites with strong articular processes.

Outer flagellum of first antennae two-jointed. Lash of second antennae reaching to end of peduncle of uropods, concealed beneath overhanging infero-lateral margins of pleon.

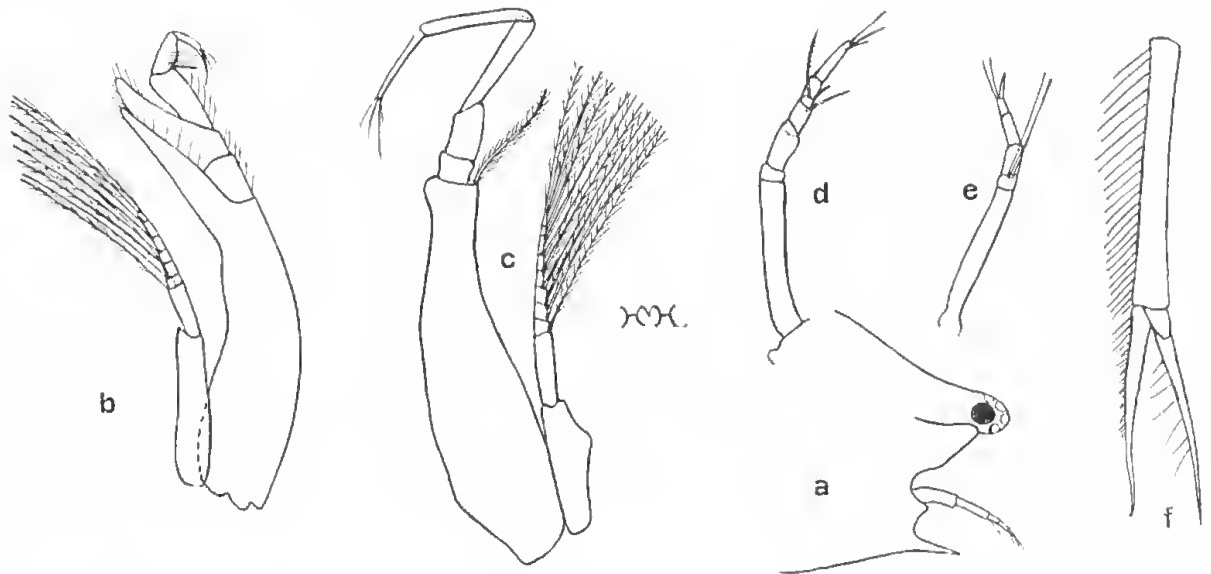


Fig. 2. *Cyclops caprella*, type male; a, lateral view of front of carapace; b, third maxilliped; c, d, and e, first, second, and third pereopods (all $\times 45$); f, uropod ($\times 32$).

Basis of third maxillipeds scarcely bent, and with apical process reaching nearly to level of apex of carpus; remaining joints together much shorter than basis; merus with very long external process extending beyond apex of carpus, which is rather elongate. Basis of first pereopods equal in length to the remaining segments together, with a plumose seta at apex which is not at all produced; carpus and propodus equal in length, dactylus a little shorter. Second pereopods longer than third to fifth pairs, with basis almost as long as the five terminal joints together, and with ischium distinct.

Peduncle of uropoda one-fourth as long again as endopod and three-fourths as long again as telsonic somite, with a row of rather long setae, which diminish in length posteriorly, on the inner margin; rami subequal in length, the exopod

slightly longer than the single-jointed endopod, and with widely-spaced setae on inner margin; endopod with setae and a few very short spines on inner margin.

Length 5.3 mm.

Colour pale brown.

Loc. South Australia: Off Black Point, Yorke Peninsula, 4-6 fath. bottom dredge (B. C. Cotton, Apl., 1934). Type, male, in South Australian Museum, Reg. No. C. 2044.

In this distinct species the carapace has procurved lateral cornua as in *Eocuma*, but differs in having the basis of the first peraeopods not produced distally into a pointed lobe, the second legs relatively long, with the ischium not suppressed, and the uropods typically as in *Cyclaspis* with elongate peduncle.

The strongly sculptured *C. boris* Hale (1928, p. 32, fig. 1-2) has a pair of deep and massive lateral projections on the carapace, but has all the facies of *Cyclaspis*.

SYMPDOMMA Stebbing.

Three species of the genus may now be listed for Australian waters. The first of these was referred to *S. africanum* Stebbing by the writer (Hale, 1928, p. 40, fig. 9-10), the second was recently described from Queensland (Foxon, 1932, p. 388, fig. 5-6), and the third is recorded below. The Australian forms are easily separated.

- a. Dorsal carina of carapace with three prominent teeth *africanum*
- aa. Dorsal carina of carapace with no prominent teeth.
 - b. Dorsal carina of carapace with one dorsal tooth. First joint of endopod of uropoda much longer than second. Dactylus of second peraeopod slender, longer than merus and carpus together *australensis*
 - bb. Dorsal carina of carapace with a row of more than a dozen small spines. First joint of endopod of uropoda subequal in length to second. Dactylus of second peraeopod stout, only about as long as carpus *bakeri*

SYMPDOMMA BAKERI sp. nov.

Non-ovigerous female. Integument moderately hard. Carapace twice as long as deep, very narrow, its greatest breadth considerably less than the depth; a little shorter than the five pedigerous somites together, and less than one-fourth the total length; dorsal carina sharp, with a series of fourteen small spines, the first situated at one-fourth of the length from the end of the ocular lobe, the last at the middle of the length. Ocular lobe narrow, subtriangular, extending beyond pseudorostral lobes, and with anterior margin crenulate; darkly pigmented, and

with several lenses. Pseudorostral lobes very narrowly subtruncate in dorsal view, with anterior edges crenulate. Antennal notch very narrow but rather deep, and antennal angle rounded and crenulate.

First pedigerous somite widened dorsally and inferiorly, its short lateral areas overlapped by the second somite; pleural parts of third to fifth somites backwardly produced.

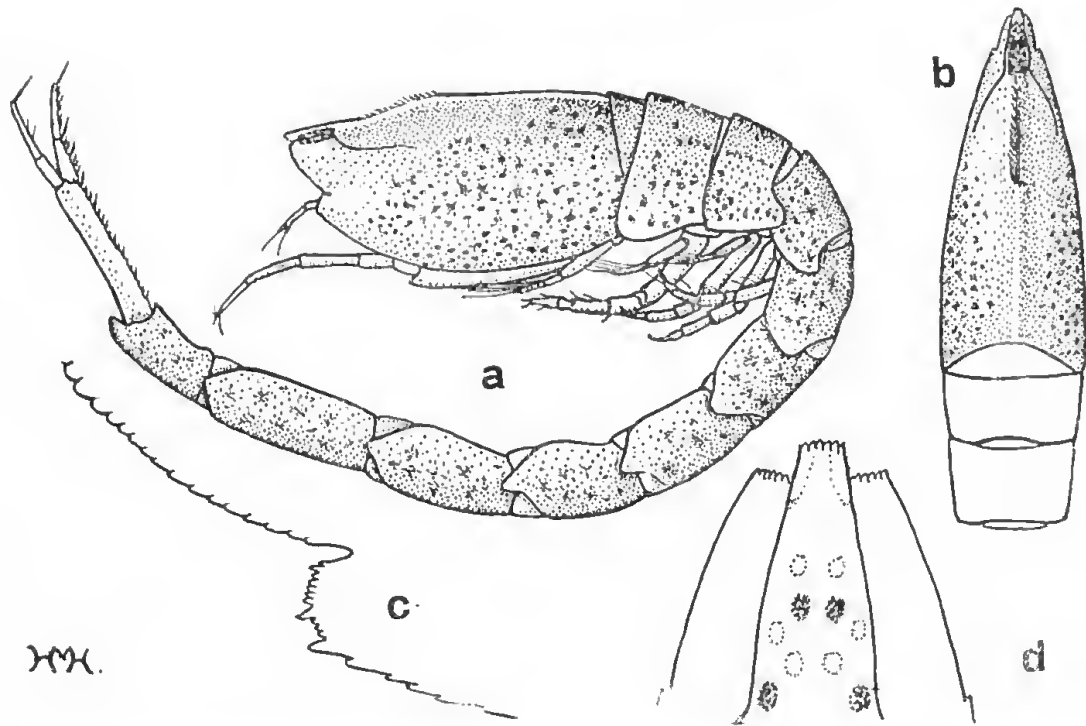


Fig. 3. *Sympodomma bakeri*, type female; a, lateral view; b, dorsal view of carapace ($\times 15$); c, antennal notch and antero-lateral angle of carapace ($\times 71$); d, dorsal view of anterior end of carapace ($\times 71$).

Pleon somites smooth; first to fifth successively increasing in length, with postero-lateral margins backwardly produced; telsonic somite only as long as first, produced between bases of uropoda.

First antennae with first joint of peduncle stout, widened basally, nearly twice as long as the second, and much longer than the third; flagellum two-jointed, and terminating in a pair of jointed setae; accessory flagellum short but two-jointed.

Basis of third maxillipeds gently curved, much more than twice as long as the palp, and with produced distal portion reaching beyond distal margin of merus; ischium, merus, carpus, and propodus subequal in length, dactylus (exclusive of long terminal spine) a little shorter. First peracopods extending well beyond anterior margin of carapace; basis slender, slightly curved towards its

base, and shorter than the remaining joints together; merus with a short stout apical spine; carpus and propodus subequal in length, dactylus a little shorter. Second peraeopods stout and armed with spines; ischium distinct, carpus slightly longer than merus and a little shorter than dactylus; propodus short, barely half as long as merus. Basis of third pair somewhat shorter than rest of limb, that of fourth one-half as long as remaining joints (including claw of dactylus), and that of third less than half as long as rest of limb; carpus of last three peraeopods longer than merus and propodus; dactylus short.

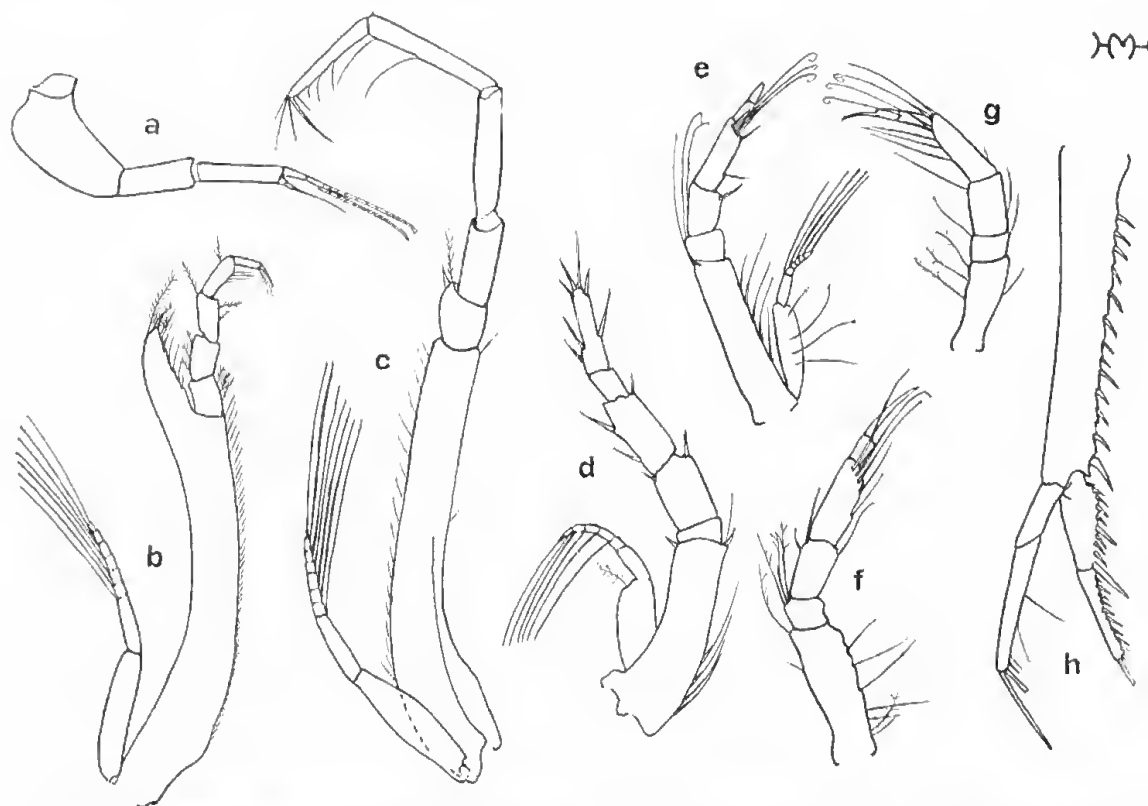


Fig. 4. *Sympodomma bakeri*, type female; a, first antenna ($\times 40$); b, third maxilliped; c to g, first to fifth peraeopods; h, uropods ($\times 25$).

Peduncle of uropods nearly as long as fifth pleon somite, and one-and-three-fourths times as long as the rami, which are equal in length; inner margin armed with more than a dozen spines; exopod with first joint rather more than half as long as second, its apex with several long spines, but inner margin with a few setae only; endopod with the two joints subequal in length, the inner margins of each armed with about ten spines of different lengths, and apex with slender spines.

Colour brown, marked with dark brown stellate spots.

Length 10 mm.

Loc. South Australia: Gulf St. Vincent (W. H. Baker, 1910). Type in South Australian Museum, Reg. No. C. 2043.

This species is named after my esteemed friend Mr. W. H. Baker, who has done so much for carcinology in our State. It has all the facies typical of *Sympodomma*, the narrow ocular lobe, the anteriorly produced basis of the third maxillipeds, etc.

The only other species of the genus which lacks prominent dorsal teeth on the carapace is *S. weberi* (Calman, 1905, p. 6, pl. i, fig. 7-12), but that species differs in having the carapace of different shape, with no distinct row of spines on the dorsal carina, the dactylus of the first peraeopods much longer than the carpus, the first joint of the endopod of the uropoda much longer than the second, etc.

FAMILY DIASTYLIDAE

DIMORPHOSTYLIS Zimmer.

DIMORPHOSTYLIS COTTONI sp. nov.

Male. Integument flexible and strong. Carapace with well-marked and finely crenulate lateral ridges; five of these are long and forwardly directed, the most posterior submarginal to the hinder edge, and the four following not meeting in the mid-line; a short ridge extends across the base of each pseudorostral lobe and meets the anterior rounded portion of the broad eyelobe, while a short ridge joins the eyelobe at the middle of its length, and connects it with an oblique backwardly-directed ridge which touches the pseudorostral ridge on each side. Carapace a little less than one-third total length, and almost twice as long as the five pedigerous somites together; vertical height about one-half length, and considerably less than greatest width. Pseudorostral lobes short, scarcely upturned, apically subacute. Antennal notch distinct and antennal angle rounded. Ocular lobe with a single large lens, which is not pigmented.

Second to fourth pedigerous somites subequal in length, and fifth a little longer; first largely concealed; second to fourth side plates expanded, on the third pedigerous somite overlapping that of second and fourth.

First three somites of pleon subequal in length; fourth longer and subequal in length to sixth; fifth nearly half as long again as sixth. Telson, including its apical spines, about as long as sixth somite; with a pair of upturned apical spines and three spines on each lateral margin of posterior portion. Second antennae with the flagellum reaching back to end of peduncle of uropoda.

Third maxilliped with basis geniculate, with a row of plumose spines on distal half of the outer edge and with apex produced and expanded on inner side, the

lamellate portion capped with several long plumose setae; palp less than one-half as long as basis; ischium and merus short, together not much longer than carpus, which is subequal in length to propodus; merus with a strong plumose seta on inner margin. Exopods of peraeopods expanded. First peraeopod extending for half its length beyond level of pseudorostrum; basis geniculate not produced apically, with plumose setae on outer edge and apex; ischium shorter than merus, which is half as long as carpus; propodus almost half as long again as carpus.

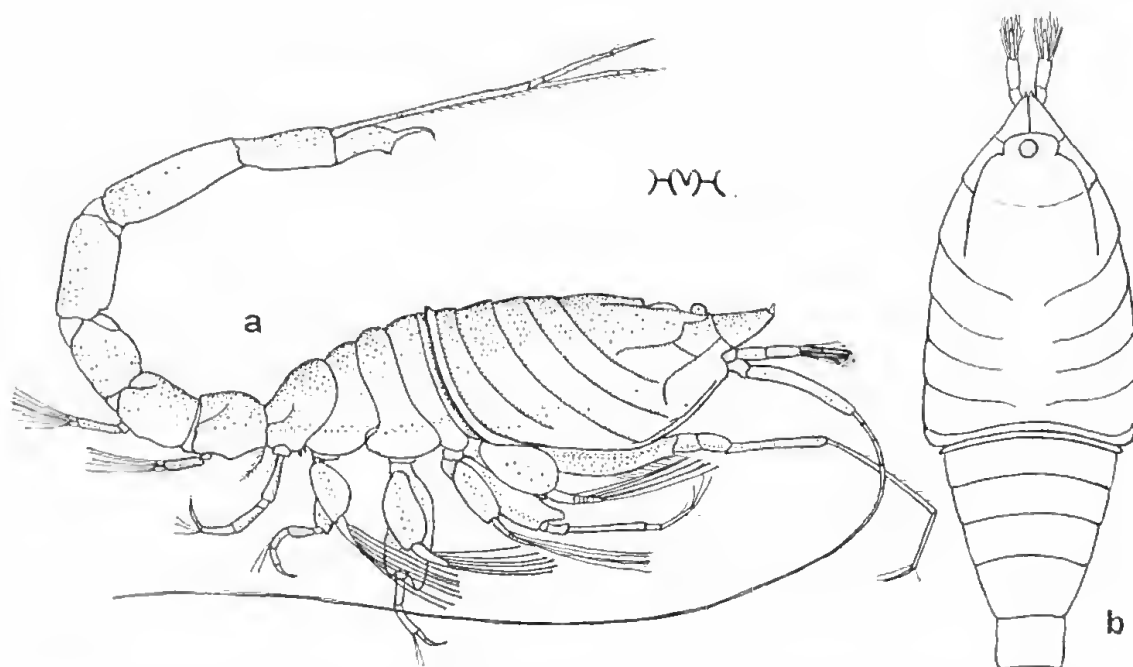


Fig. 5. *Dimorphostylis cottoni*, Type male; a, lateral view; b, dorsal view of cephalothorax ($\times 26$).

Second peraeopod reaching forward a little beyond basis of first pair, the basis widened at proximal third (where it is more than one-third the length) and with the apical expansion reaching to level of end of merus; ischium very short, and merus one-fourth as long as the elongate carpus. Third peraeopod with basis similar to that of second, but shorter, and with apical lamella smaller, reaching beyond distal margin of the ischium; merus and carpus subequal in length. Basis of fourth peraeopod with distal expansion shorter than in others; rest of limb much as in third. Fifth peraeopod with basis abruptly narrower, widest at apex; ischium about one-third as long as merus, which is equal in length to carpus.

Peduncle of uropoda twice as long as sixth pleon somite, with thirteen short plumose spines on inner edge; rami, including terminal spines, equal in length; without the spines the endopod is one-third as long again as exopod; first joint of

endopod two and a half times as long as second and third joints together, and with eleven marginal spines; third longer than second, and slightly shorter than terminal spine; second and third segments each with one spine at inner apical angle; basal joint of exopod one-fourth of the length of second, which is one-fourth as long again as terminal spine.

Colour white.

Length 5 mm.

Loc. South Australia: Gulf St. Vincent, 3 miles off Semaphore, bottom dredge, 5-7 fath. (B. C. Cotton, Nov., 1931). Type in South Australian Museum, Reg. No. C. 2042.

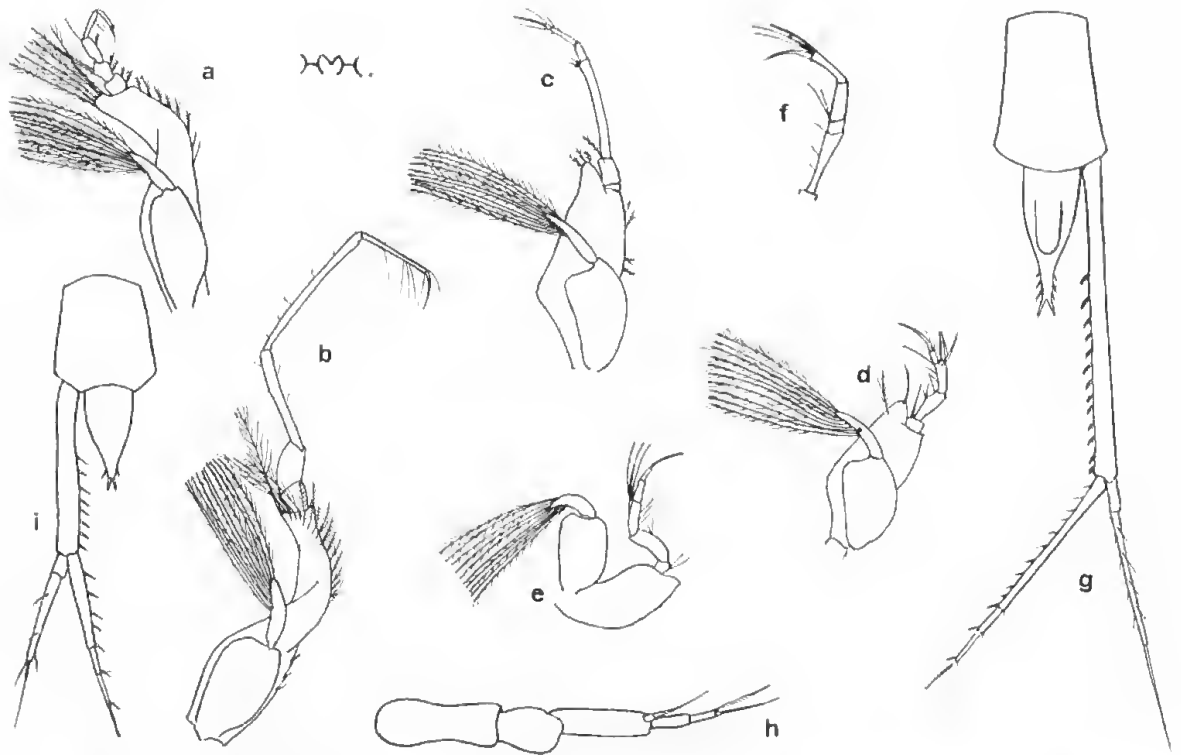


Fig. 6. *Dinorphostylis cottoni*, type male: a, third maxilliped; b to f, first to fifth pereopods ($\times 29$); g, terminal somites of pleon and uropod ($\times 43$). Paratype immature male; h, first antenna ($\times 77$); i, terminal somites of pleon and uropod ($\times 43$).

A male 3.3 mm. in length was taken at the same time. In this the absence of pleopods and the state of development of the exopods of the legs indicate immaturity; the first antennae are not hairy, and have the second joints of the peduncle only about half as long as the first, which is longer than the third; the accessory flagellum is small and two-jointed, the outer three-jointed, the last segment minute. The telson has a pair of apical spines, but only one spine on each lateral margin near the apex. The uropods are relatively shorter than in the adult, the peduncle

being only one and one-half times as long as the sixth pleon somite, and barely longer than the endopod, instead of nearly half as long again; the proportions of the joints of the endopod are different, being 38 : 11 : 12, and the terminal spine 13. The peduncle of the uropods is armed with only eight marginal spines, the first segment of the endopod with five, and the second and third segments with one each.

The male of *D. cottoni* resembles the male of the genotype, from Japan, much more closely than does the Queensland *D. australis* Foxon (1932, p. 390, fig. 7-8). The antennae, uropoda, and general facies are quite similar, but in the South Australian form there is an additional, oblique, lateral ridge on the carapace, only one ocular lens instead of three, and no lateral flaps on the telson which has only two apical spines; further, the fifth pleon somite is apparently less elongate in *D. asiatica* (Zimmer 1921, p. 144, fig. 47-55).

REFERENCES.

- Foxon, G. E. H. (1932) : *Great Barrier Reef Exped., 1928-29, Sci. Rep.*, iv.
Calman, W. T. (1905) : *Siboga Exped.*, Mon. xxxvi.
Hale, Herbert M. (1928) : *Trans. Roy. Soc., S. Aust.*, lii.
Zimmer, C. (1921) : *Mitt. Zool. Mus., Berlin*, x.